DOCUMENT RESUME

ED 270 768 CS 209 815

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TITLE The Agenda-Setting Effects of Dominant Photographs.
PUB DATE Aug 86
NOTE 36p.; Paper presented at the Annual Meeting of the Association for Education in Journalism and Mass Communication (69th, Norman, OK, August 3-6, 1986).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Students; *Design Preferences; Graphic Arts; Higher Education; Journalism; *Newspapers; *Photographs; Political Issues; *Reader Response
IDENTIFIERS *Agenda Setting; *Salience; Southwest Texas State University

ABSTRACT

Two hypotheses in a study examining the influence of a dominant piece of art on the salience of a news story for readers, thus affecting their agendas, were as follows: (1) a story with dominant art will increase a reader's issue salience more than a story without dominant art; and (2) a story with balanced art will increase a reader's issue salience more than a story with no art. Salience was defined as the importance attributed to an issue by a reader, dominant art as a photograph that is noticeably the largest element on the news page, and balanced art as a photograph which is not noticeably larger than other elements on the page. Subjects, 66 students enrolled in Reporting I classes at Southwest Texas State University, were randomly assigned to one of three groups, each of which received three different newspaper front pages, each on a different issue set in a different design. Results showed that issues manipulated in the experiment were raised on the respondents' agenda of issues, and that newspaper content, as well as how a story is displayed, can have an immediate influence on readers, but that this effect decays over time. The findings supported both hypotheses, though the results may be misleading because the most significant increase occurred for the issue that was dominant on the final day of the study, indicating an interaction between dominant art and recency as the cause of the largest effect in the study. (SRT)

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THE AGENDA-SETTING EFFECTS OF DOMINANT PHOTOGRAPHS

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**Paper presented to the Association for Education in Journalism and Mass Communication conference, August 1986, Norman, Oklahoma.

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THE AGENDA-SETTING EFFECTS OF DOMINANT PHOTOGRAPHS

INTRODUCTION

Though the vast majority of research into the agenda-setting function of the press has produced findings which support the theory, a few questions remain unresolved. One such area in the theory involves causality. Researchers such as Shaw and McCombs (1972, 1977), Funkhouser (1975) and Cohen (1963) have found that the press does not influence what the public thinks but rather what the public thinks about -- the basic hypothesis of agenda-setting. Critics, however, have argued that the mass media's influence may be minimal and it is actually the public which somehow influences what the media cover.

Cross-lagged correlations in this area (Shaw and McCombs, 1977) have produced ambiguous results. Likewise, longitudinal studies (Tipton, Haney and Baseheart, 1975; Funkhouser, 1975) have not clarified the puzzle of which direction the agenda-setting effects travel. Campbell and Stanley (1963), however, suggest the best method to determine causality is through an experiment, a procedure previously unattempted with newspapers and agenda-setting.

Though an agenda-setting experiment has never been attempted with newspapers, this method has been explored with other media. Iyenger, Peters and Kinder (1982) conducted an experiment which examined the agenda-setting theory through television newscasts which they altered. This is one of the first studies to show a causal relationship between the media agenda and the subsequent public's agenda.

Testing agenda-setting through a newspaper experiment also would offer a good opportunity to examine the effects of newspaper design. Not only should the content of stories effect the public's perceived importance of issues, but so too should cues from the display of stories by newspapers.

Examining the effects of newspaper design also has been neglected for the most part. Bain (1980) found that a page with one large photograph is perceived as more appealing to the reader than a page with many pictures. Because of the Bain study, many editors have begun using a "dominant art" format for newspaper design, where one huge photograph, sometimes taking up to one-fourth of the available space on the front page, dominates the page and thus draws the reader's eye to it. Some editors, however, continue to adhere to the previously popular method of a "balanced art" design, where a number of photographs, none of which is noticeably dominant, are scattered across the page in a balanced fashion.

The use of dominant art, however, raises an ethical problem which, because this approach has only recently become popular, remains unresolved. The dominant photograph may influence, either consciously or subconsciously, the salience of an issue for a reader. In other words, dominant art, through agenda-setting, could affect the agendas of newspaper readers. If dominant art does raise a reader's issue salience, newspapers would face an awkward dilemma -- readers

prefer a dominant piece of art in the overall design of a page, yet could be influenced by its effect.

RELATED STUDIES

A number of studies have shown that newspapers and television, to a certain degree, can affect the salience of an issue for their readers and viewers. The pioneers in this field of research have been McCombs and Shaw (1972, 1977). In their research during the 1968, 1972 and 1976 presidential elections, they found that the media do not necessarily affect what the public thinks, but under certain circumstances do influence what the public thinks about.

Studies looking at the causal direction of the agenda-setting effects, however, have produced mixed results. Funkhouser (1973), for example, attempted to study agenda-setting over time. In his longitudinal study, he looked at fourteen issues over seven years and found a .78 rank order correlation between coverage and importance over the entire period. However, he admitted that from his data it was impossible to tell whether the content preceded the coverage or vice versa. Graphs in his study showed some issues in which the peaks of media attention precede public endorsement and other issues in which the reverse held true.

Tipton, Haney and Baseheart (1975) looked at city and state election campaigns in Kentucky and issue salience over time. Their findings showed no consistent evidence that the media is serving a causal agenda-setting function. They conclude there seems to be a relationship between media coverage

and issue salience, but no marked evidence the direction of effect is media to public rather than the reverse.

The study conducted by Iyenger et al. (1982) was the first which attempted to test agenda-setting in an experiment. This study looked at the effects of newscasts, which were altered to stress certain issues, on television viewers in a laboratory situation. Their findings supported the agenda-setting theory.

Quite possibly, a newspaper experiment could show a greater influence than the Iyenger et al. study. A number of researchers (such as Tipton et al., 1975; and Benton and Frazier, 1976) have found that newspapers are a better indicator of the public agenda than television newscasts. Erbring, Goldenberg and Miller (1978) also argue that newspapers could have a stronger agenda-setting effect on the public than television.

Somewhat less research has been done on the effects of photographs. Some studies, in fact, have produced conflicting findings. Nickerson (1968), for example, found that long-term memory for pictorial material was very high, while Willows (1978) discovered that pictures actually distracted readers. Subjects in the latter study, however, were grade-school students, a group that is not very representative of normal newspaper readers.

Bain's study (1980) may be the most extensive on photographs' effects on newspapers readers to date. In an experiment examining the effect of newspaper design on

readership, he found almost half of his 52 respondents said the first thing they looked at on a newspaper's front page was a picture. He also found that respondents were more likely to read a story, as well as read more of a story, which was accompanied by a large photograph. However, Bain's experiment was set up to deal only with the readers' preferences in newspaper design.

Finally, Altheide (1985) attempted to tie visual material to agenda-setting. In his study of television news, he found that how certain news items are stressed is influenced to a large degree by the availability of visuals.

HYPOTHESES

The theory of agenda-setting, according to Shaw and McCombs (1977), is based on the assumption that the news audience learns to take news importance from cues in the press. This study looked at story display as one cue which could affect readers' issue saliences. Two research hypotheses, both of which look at the effect of the size of photographs (the independent variable) on issue salience (the dependent variable), were tested:

1. A story with dominant art will increase a reader's issue salience more than a story without dominant art; and

2. A story with balanced art will increase a reader's issue salience more than a story with no art.

For the purpose of this study, salience is defined as the importance attributed to an issue by a reader. Dominant art is defined as a photograph that is noticeably the largest

element on the news page. Balanced art is defined as a photograph which is not noticeably larger than other elements on the page. Three issues, or topics of stories, are used in this experiment: national defense, pollution and the plight of American farmers.

A positive relationship between the size of photographs run by a newspaper and readers' issue salience is expected for a number of reasons. A large photograph takes up a large area of space on a news page. It logically follows that a reader should give more attention to that element of the page which dominates the available space. A large photograph also tends to catch the reader's attention, an underlying assumption of dominant art. Once the reader's attention has been caught, he is likely to spend a great deal of time observing the dominant photograph and the accompanying story.

A large photograph also breaks up the greyness of a page and, therefore, is pleasing to the reader's eye. The reader should give most of his attention to the element which is the most pleasing to look at on the newspaper page.

Finally, if a newspaper devotes a great deal of space to an issue -- by running a story with a large picture -- the reader will perceive that issue to have a great deal of importance and will raise it above other issues on his agenda.

For these same reasons, a story which is run with a small photograph should, to a lesser degree, increase the salience of issues among readers more than a story which is run with no photograph.

METHOD

The subjects for this study consisted of 66 students enrolled in four Reporting I classes at Southwest Texas State University in San Marcos, Texas. Few of the students had any previous journalistic experience. In fact, only about one-fourth of the students in these classes had goals of becoming reporters; most were majoring in advertising or public relations and were taking the course as an elective. These students were assigned randomly to three experimental groups.

Since the 66 subjects in this experiment were enrolled in classes which met twice a week, on Monday and Wednesday or Tuesday and Thursday, the experiment was conducted over two and a half weeks. The subjects were pretested on Wednesday, October 2 or Thursday, October 3. The respondents were then given three treatments during the following three class periods, either Monday-Wednesday-Monday (October 7, 9 and 14) or Tuesday-Thursday-Tuesday (October 8, 10 and 15). A posttest was administered the class period following the final treatment -- either Wednesday, October 16 or Thursday, October 17. The treatments came in the form of newspapers printed by the Austin American-Statesman. However, as in the Iyenger study, the news content was altered. Each day, each of the three groups received a different American-Statesman front page in which one photograph and/or story dealing with one of three specified national issues -- national defense, the plight of American farmers or pollution -- was added.

The experiment was set up in a counterbalanced design, so each group received one story with a dominant photograph, one story with a balanced photograph and one story with no photograph. Each group received each size of photo with a different issue. Table 1 shows this distribution.

The defense story dealt with Secretary of Defense Caspar Weinberger complaining that equipment used by the defense department is dangerously outdated. The farmers story dealt with a Texas farmer who, along with an activist group, blocked entrances to his farm to thwart foreclosure and repossession by financial institutions. The pollution story dealt with the U.S. Department of Health predicting that within 25 years, the air in 10 cities in the United States, including Dallas and Houston, could be too polluted for human life unless stricter air pollution standards are enforced. All three articles were based on stories which moved on the American-Statesman news wires and carried bylines of New York Times reporters. Some changes were made in the content of each story to make it more sensational and apparently worthy of front-page display. Each story was edited by American-Statesman copy editors.

Photographs which accompanied these stories came from the American-Statesman photo files. The national defense picture showed an aged CH-46 transport helicopter which Weinberger in the accompanying story said the United States would have trouble selling for "scrap metal." The farmer picture showed a elderly man, identified as the person who

was fighting foreclosure, working on his farm with a team of mules. The pollution picture showed smoke stacks spewing smog which is engulfing a city identified as Los Angeles.

The counterbalanced design allowed the respondents to act as their own control groups. Also because of the design, only three stories and three pictures were needed; each group received each story once -- on different days with or without an accompanying photograph which varied in size.

Each night during the experiment, a proof was shot of the final-edition front page for the following day's American-Statesman. This proof then was used in redesigning the altered front pages. Space was cleared off the page for the new stories by eliminating local stories which did not jump, features or promos. It was felt the local stories were of minimal concern to the the subjects, who lived in San Marcos, approximately 30 miles south of Austin. The new articles were placed at or near the top of the page. The pages were then re-shot, again using the proof machine. The original front page of the American-Statesman was then removed and replaced by these altered pages.

The type and photographs reproduced by the proof machine, which had been purchased by the American-Statesman only a few weeks earlier, proved to be of the highest quality; there was no noticeable difference in the type and very minimal difference in photographs.

Though these pages were not of the same material as a normal newspaper page, it was felt the different texture of

the altered pages was a necessary evil; the proofs avoided the tremendous expense that would come from running these pages on the American-Statesman press.

To avoid confusing the subjects, the American-Statesman layout rules were strictly followed. Due to varying space limitations on the pages, each group did not get exactly the same layout for each story. Lengths for the three stories in the experiment varied between 10 and 14 inches -- typical for American-Statesman front page stories. Headlines and number of other stories on the pages also differed as circumscribed by the space. Finally, the size of the photos differed slightly, from 63.6 to 54 square inches for the dominant photographs and from 16.5 to 13.5 square inches for the balanced photographs.

The subjects were exposed to three repetitions of the treatment. They were told that some of the front pages might differ between students in the classes because they were different editions.

The students also were told that they would later evaluate these different editions, and that this was the purpose of the exercise. Instructors were fairly certain that none of the students compared newspapers with other students. The students received the newspapers during the class periods, but were not allowed to read them in class. The students were instructed to read the newspaper as they would on any other day; if they never read the newspaper previously, they should ignore the newspapers they were

given. The respondents also were told to avoid contact with all other newspapers for the duration of the experiment.

The pretest and posttest were identical with one exception. The pretest included a section on personal data, which was replaced in the posttest with a section dealing with the subjects' perceptions of the newspapers.

Both questionnaires included twelve questions which used a five-point scale asking how concerned the respondents were about specific issues -- extremely concerned, very concerned, somewhat concerned, a little concerned, or not at all concerned. The questions dealt with such diverse issues as the national debt and drug abuse; they also included the three issues with which the study was concerned: national defense, pollution and the plight of American farmers. Both surveys also included an open-ended question, asking the respondents to name the issue which concerned them the most.

The three groups in the experiment each received a different size photograph with a different issue on a different day. An analysis of variance was computed to determine if there was any significant difference between pretest and posttest scores for each group on each of the three variables in the experiment -- the day of treatment, issue and size of photograph. If the first hypothesis is supported, the respondents' F-scores for the issues on which they received an accompanying dominant photograph will be significantly larger than F-scores for the other variables. If the data supports the second hypothesis, the respondents' F-scores for

the issues on which they received an accompanying balanced photograph will be significantly larger than F-scores for the issues on which they received no photograph.

RESULTS

All three issues used in the experiment rose on the students' overall agenda. National defense went from fifth to second, pollution rose from number six to a tie for number four, and the plight of American farmers moved from eleventh to a tie for seventh. The respondents' scores on the five-point scale also rose substantially for the three issues. The mean for the change scores (the posttest scores minus the pretest scores) was .3333 for national defense and the plight of American farmers. The mean change score for pollution was .3182. Analysis of variance F-scores for all three issues are significant at the $p < .05$ level, supporting an agenda-setting effect overall. The rankings and scores of issues for the pretest and posttest, as well as the mean change scores for each issue, appear in Table 2.

The national debt, though only tenth on the overall agenda of the students, was mentioned 13 times on the pretest and 12 times on the posttest as the number one issue facing the United States. Foreign relations, with 13 votes, was the issue mentioned most often on the posttest as the number one issue facing the United States. The issues mentioned most often by the students are shown in Table 3.

Both hypotheses were supported. As seen in Table 4, the variable dominant art produced the most significant analysis of variance F-score in the experiment. Computing an ANOVA for pretest scores compared to posttest scores for Cells I, VI and VIII of Table 1 produced an F-score of --11.939 ($p < .001$). Balanced art also produced a significant F-score -- 4.512 ($p < .05$) when comparing pretest and posttest scores for Cells II, IV and IX. No art (Cells III, V and VII) did not produce significant results.

Both hypotheses are further supported when comparing results within the three variables. Table 5 shows only one variable produced an analysis of variance which was significant -- the size of photograph variable. Here the variances of pretest and posttest scores for dominant art (Cells I, VI and VIII of Table 1 combined) compared with scores for balanced art (Cells II, IV and IX combined) and compared with scores for no art (Cells III, VI and VII combined) produced an F-score of 3.545, significant at the $p < .05$ level. Day of the treatment produced an F-score of .531 and issue produced an F-score of .009 -- both insignificant. In other words, scores on issues in which respondents received a dominant photograph differed significantly from scores on issues in which respondents received a balanced photograph. Likewise, scores on issues in which respondents received a balanced photograph differed significantly from scores on issues in which respondents received no art. Apparently, only the size of photograph influenced the readers' perceived

importance of issues. The day and the issue were not important factors in determining issue importance.

DISCUSSION

The principal finding of this study is that, as in the Iyengar television study, issues manipulated in the experiment were raised on the respondents' agenda of issues. The results show newspaper content, as well as cues such as how a story is displayed, can have an immediate influence on readers, but this effect apparently decays over time.

Though the findings support both hypotheses dealing with accompanying photographs, the results may be somewhat misleading. For example, when separating the data by issues, pretest and posttest scores grouped by size of photograph received showed a significant difference on only one topic. Analyzed in this fashion, the pollution issue (Cell VI of Table 1 compared with II and with VII) produced an analysis of variance F-score of 3.258, which was significant at the .05 level. In other words, the pollution story, when accompanied by a dominant photograph, appeared to have influenced the respondents' issue salience more than the same story when accompanied by a balanced picture or no picture. F-scores for all three issues grouped by size of photograph are shown in Table 6. Though neither of the other issues produced significant results, the mean change scores (posttest scores minus pretest scores divided by number of respondents) on national defense show the expected trend, as seen previously in Table 1.

An interaction between the day the treatment was received and the size of photograph could be one possible explanation for the significant results of only the pollution issue. Pollution was the issue with which one group of respondents received dominant art on the final day of the study. This difference could be explained by what Hovland et al. (1958) called the "recency effect." Respondents may have perceived the pollution issue as more important simply because it was the most recent topic they received and was still fresh in their minds.

Logically, two alternative explanations could have caused this finding. First, the pollution photograph, which showed smog hovering over a city, could have caused the respondents to raise the salience of the issue simply because it elicited high emotion in them. This probably was not the case, however. These same photographs were used in the experiment for the balanced art treatment; the balanced pollution picture produced less change (mean: .2381) than either defense (.3478) or farmers (.4545).

Second, the story, which involved the two largest cities in Texas, may have been more obtrusive to the respondents, therefore causing a higher degree of agenda-setting influence. Again, however, this probably did not happen. The pollution story with no picture produced less change (.0870) than either defense (.1818) or farmers (.1905).

If the most recent story produced the largest change when combined with a dominant picture, the second-most recent

story with a dominant photograph should produce the second-most change. But the farmers story with dominant art did not produce as much change as the same story with balanced art two days earlier. This could have been caused by an intervening variable. On the second day of the study, the Achille Lauro, an Egyptian ship, was hijacked by terrorists and, subsequently, an American died in the incident. This major news event may have taken attention away from the farmers story. Consequently, the farmers story produced the smallest change when accompanied by dominant art; the mean of the change scores for farmers was .3478, to .4762 for defense and .6364 for pollution.

Though national defense produced results which were not statistically significant, a trend nonetheless emerged. The dominant photograph produced the largest change scores -- .4762 to .3478 for balanced art and .1818 for no art. The defense story with the dominant photograph was distributed on the first day of the study, however, which could in part explain the weakness of the effect. Since two treatments and more than a week had passed between the time respondents received the dominant defense photo and the time they took the posttest, these respondents probably experienced a great number of distractions which could have reduced their salience on this issue.

Further evidence of the influence of the dominant photographs can be seen by looking at results of the treatments by the day they were received. The issue on which the respon-

dents received the dominant photograph showed the largest mean change score, to varying degrees, on all three days. The mean change scores for balanced art also increased more than corresponding scores for no photograph on all three issues, as seen in Table 1.

The two other issues which showed a marked difference between pretest and posttest scores, education and race relations in the U.S. and abroad, also deserve mention.

Education was the number one issue in the pretest, so its decrease probably occurred because the respondents felt other issues were now more important. When one issue is raised on a reader's agenda, some other issue must suffer the consequences, as education did in this case. However, every action apparently does not have to produce an equal and opposite reaction. Scores for the 66 respondents on the 12 issues -- 792 responses total -- rose by 31 from pretest to posttest. The content of the altered pages may have produced some changes in individual saliences, but the respondents did not abandon issues they previously felt were important. This same concept was discovered by Siune and Borre (1975), who found that respondents were reluctant to discard pet issues in order to adopt the issue profile of the mass media.

The change in scores for race relations could again be attributed to the hijacking of the Achille Lauro. Regrettably, terrorism was not listed on either the pretest or posttest. However, many subjects probably looked for the issue most closely resembling it -- apparently race relations

in the U.S. and abroad. Theoretically, the scores might have differed even more had terrorism been listed, which would have relieved any ambiguity the respondents may have felt.

The overall changes in the race relations scores were not statistically significant. However, since the hijacking occurred in the middle of the experiment, each experimental group received two stories of the hijacking. Consequently, one group did not receive any pictures of the hijacking (Group 3, which received dominant art with the farmers story and balanced art with the national defense story on the days following the hijacking). The other two groups, though, did receive a picture with a hijacking story on one day. Looking merely at the mean change scores from pretest to posttest within groups, scores for Group 3, which did not receive a picture on the hijacking, changed by only .1304. However, scores on this issue changed in Group 1 by .3333 and in Group 2 by .3636. These unexpected findings further show a pattern that photographs can affect readers' issue salience.

The affect of photographs on readers, however, may be somewhat limited. The findings suggest that size of photograph can influence a readers' concern on an issue, but it does not lead to the readers to making this issue its central focus, as seen by the differences between Table 2 and 3. The issues in the experiment were named ten times as the most important issue in the pretest, but only nine times in the posttest. Apparently, photographs can help an issue get

onto a readers' agenda, but it doesn't necessarily push it atop this agenda.

Overall, according to the results of the study, the most significant increase from pretest to posttest occurred for the issue which included a dominant photograph on the final day of the study. Dominant art, in other words, appeared to have interacted with the recency of the treatment to produced the largest effect in the study.

A few factors in the design of the experiment many have affected the results. The different texture of the altered front pages, for example, could well have given the students a cue to read these pages more carefully than any of the other pages in the paper. The scores on the issues in the experiment did fluctuate a great deal.

The reproduction of the photographs on the altered pages was outstanding. However, because the American-Statesman has avoided using dominant art in the past, the subjects may have been overly influenced by the sudden appearance of large pictures.

Finally, the respondents themselves could have affected the strength of the data. For example, the students in these journalism classes are required to read the newspaper daily to keep up on current events. The newspaper contents, therefore, may not have been providing respondents with "incidental learning," as would be the case with the average newspaper reader, but rather with information the subjects wanted to memorize. However, this could also further support

the reliability of the study; the sample pool was not biased by subjects who did not read the newspapers.

The students also form a group which is younger and more educated than the general public. This was indicated by the respondents' concern for education, ranking it number one overall on their aggregate agenda in the pretest. However, McLeod et al. (1974) found that agenda-setting had no effect on respondents under the age of 25 -- the same group which comprised most of this experiment. In other words, agenda-setting was found to influence a group which had previously shown little response to agenda-setting effects.

IMPLICATIONS

The results of the experiment suggest newspapers can have an immediate influence on the issue saliences of its readers, an effect not previously demonstrated. The concept of time frame in agenda-setting, in fact, has received relatively limited attention. Shaw and McCombs (1977) suggested the agenda-setting effect of newspapers is a process of three to five months. Winter (1981) found the optimal effect span for the civil rights issue encompassed the period between zero to eight weeks before interviewing. However, a story with a dominant photograph could provide a cue which readers use to determine the importance of certain issues -- a process which can take place in a relatively short time.

The major implication of these findings is that editors, through their gate-keeping function, may have the power to raise their readers' salience on certain issues over a short

period of time by merely increasing the size of photographs. Quite possibly, some editors -- at newspapers which solely use the dominant art concept of layout -- may be doing just that without realizing the consequences. It is not uncommon for an editor to tell the copy desk to use a specific photograph as the dominant picture of the day "because we don't have anything better." The editor may not be aware that this very picture may be giving off salience cues to his readers which are misleading in terms of the importance of events in reality.

The results of this study, then, pose a dilemma for editors. If editors continue to adhere strictly to a dominant art layout format, this large photograph may mislead readers into believing the issue involved in it is more important than it really is. Editors, therefore, are advised to pay more attention to their newspapers' design. Dominant art could be used -- in fact, should be used -- when a story merits such eye-catching display. However, running a dominant photograph simply for the sake of newspaper policy may mislead and confuse readers. A minor story should be given minor display.

Finally, three aspects of this experiment bear future study. First, the number of exposures should be varied in a replication. Logic would dictate that if one exposure of dominant art had as strong of an immediate effect on reader salience as the findings indicate, two exposures on the same issue would have even more influence. Similarly, the effects

of dominant art on different issues over time should be tested. For example, if readers receive dominant art each day, they may build up a tolerance to the point where they expect a large picture and, in turn, the photograph has less of an effect on the reader.

Second, research should be conducted into the effects of the content of photographs. From this study, it is apparent that photographs can affect readers, but some types of photographs may affect readers more than others. The photographs in this study were chosen because it was felt their contents would arouse reader interest. However, different photographs, such as highly emotional pictures, may help readers digest and recall information in accompanying stories. Wolf and Grotta (1985) suggest that animated photos draw a reader's attention, but do not necessarily increase the likelihood of recalling information from stories.

Finally, researchers should look into the procedures editors use in deciding which pictures and what size of pictures they will run in their newspapers. Some may prefer to run large photographs of human suffering. Others may prefer to run unusual wild art. Research into these thought processes may provide further clues into the still cloudy area of newspaper design and its effects.

Table 1: Distribution of size of photographs and stories, and mean change scores for each group on each of the three days of the experiment.

	Day 1	Day 2	Day 3
Group 1 N=21	Cell I Dominant Defense .4761	Cell II Balanced Pollution .2381	Cell III No Art Farmers .1905
Group 2 N=22	Cell IV Balanced Farmers .4545	Cell V No Art Defense .1818	Cell VI Dominant Pollution .6364
Group 3 N=23	Cell VII No Art Pollution .0870	Cell VIII Dominant Farmers .3478	Cell IX Balanced Defense .3478

Table 2: Pretest and posttest rankings and scores, and mean change scores for issues in the experiment (N=66).

	Pre-test Rank	Pre-test Score	Post-test Rank	Post-test Score	Mean Change Score
Education	1	291	4(tie)	270	-.32*
Tuition	2	283	1	275	-.12
Crime	3	279	3	271	-.12
Drug abuse	4	262	6	252	-.15
Nat. Defense	5	252	2	274	+.33*a
Pollution	6	249	4(tie)	270	+.32*b
Cost of living	7	247	9	242	-.08
Gov't corruption	8	246	10	241	-.08
Race relations	9	226	7(tie)	243	+.26**
National debt	10	225	11	235	+.15
Farmers	11	222	7(tie)	243	+.33*c
Busing	12	153	12	151	-.03

Note: T designates a tie.

* -- $p < .05$
** -- $p < .10$

a -- ANOVA of pretest scores compared with posttest scores for Cells I, V and IX of Table 1 combined.

b -- ANOVA of pretest scores compared with posttest scores for Cells II, VI and VII of Table 1 combined.

c -- ANOVA of pretest scores compared with posttest scores for Cells III, IV and VIII of Table 1 combined.

Table 3: Frequency of issues named as the most important by respondents.

Rank	Pretest	Times Mentioned	Posttest	Times Mentioned
1.	National debt	13	Foreign relations	13
2.	National defense	10	National debt	12
3.	Threat of war	8	Terrorism	8
4.	Arms race, tie	6	National defense	7
5.	For. relations, tie	6	Arms race, tie	5
6.	World Peace	5	World peace, tie	5
7.	Aids	3	Aids	3
8.	Crime	2	Pollution	2

Note: Ten issues were named once in the pretest and nine issues were named once in the posttest.

Table 4: Pretest and Posttest aggregate scores, analysis of variance F-scores and significance for size of photograph and day of the week variables (N=66).

Variable	Pre-Test Scores	Post-Test Scores	F-Score	Significance of F
Dominant art (Cells I, VI and VIII* combined)	243	275	11.939	.001
Balanced art (Cells II, IV and IX combined)	233	256	4.008	.036
No art (Cells III, V and VII combined)	249	259	1.116	.293
Day 1 (Cells I, IV and VII combined)	237	259	5.889	.017
Day 2 (Cells II, V and VIII combined)	242	259	3.051	.083
Day 3 (Cells III, VI and IX combined)	246	272	5.499	.021

* -- Cells refer to Table 1.

Table 5: Analysis of variance F-scores and significance within variables in the experiment.

Variable	F-score	Significance of F
Size of photograph (Cells I, VI and VIII* combined; compared with II, IV and IX combined; and with III, V and VII combined)	3.545	.031
Day of treatment (Cells I, IV and VII combined; compared with II, V and VIII combined; and with III, VI and IX combined)	.531	.589
Issue (Cells I, V and IX combined; compared with II, VI and VII combined; and with III, IV and VIII combined)	.009	.991

* -- Cells refer to Table 1.

Table 6: Analysis of variance F-scores and significance for the three issues grouped by the size of photograph received.

Issue	F-score	Signif-icance of F
Pollution (Cell VI* compared with II and with VII)	3.258	.0450
National defense (Cell I compared with IX and with V)	.994	.3757
Farmers (Cell VIII compared with IV and with III)	.664	.5185

* -- Cells refer to Table 1.

APPENDIX A

EXAMPLES OF
ALTERED FRONT PAGES

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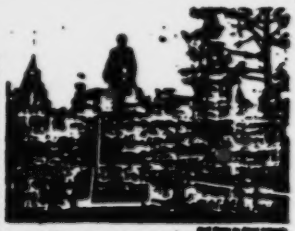
Day 1, Group 2
Balanced art with plight of farmers

Phil Niekro wins 300th game without trademark knuckleball

Cowboys battle past Giants in test of offensive strength

Austin American-Statesman

Baptist school defends diverse education



U.S. ties viewed as help, peril by Hondurans

Foreclosure is fought at Central Texas farm

End to Lebanese war demanded in kidnap

Bid to fight deficit wins Senate approval

500 London youths fight police

Day 2, Group 2
No art with national defense

Austin American-Statesman

Weinberger says U.S. is losing arms race

Deaths claimed in ship hijacking

Senate overcomes impasse on budget

Singaporean wins praise of President

$116 footwear costs teen-ager gunshot wound

Airman denies abuse in starvation of mother

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Day 3, Group 2
Dominant art with pollution

Austin American-Statesman

Gramm's star rising with deficit reduction plan

Hope fades for taking Palestinian

Expulsion unlikely for hijack leader

10 cities face grim pollution problem

Mayors from two eras clash in Houston race

Incumbent campaigning for third term opposed on budget, homeowned home

Inside

Royals, Cards hang on

Record hits 10,000 yards after Tony Dorsett's 99-yard run

Retail legends missing

Classified

Start of top atom smasher called giant step for physics

BIBLIOGRAPHY

Altheide, David. 1985. Media Power, Beverly Hills: Sage Publications, Inc.

Bain, Chic. 1980. Newspaper Design and Newspaper Readership: A Series of Four Experiments, Research Report No. 10, Center for New Communications, School of Journalism, Indiana University, Bloomington, Indiana.

Benton, Marc, and Frazier, Jean P. 1976. "The Agenda-Setting Function of the Media at Three Levels of 'Information Holding,'" Communication Research, 3:261-274.

Campbell, Donald T., and Stanley, Julian C. 1963. Experimental and Quasi-Experimental Designs for Research, Chicago: Rand McNalley College Publishing Company.

Cohen, B.C. 1963. The Press and Foreign Policy. Princeton, N.J.: Princeton University Press.

Erbring, Lutz; Goldenberg, Edie; and Miller, Arthur. 1980. "Front Page News and Real World Cues: Another Look at Agenda-Setting by the Media," American Journal of Political Science, 24:16-49.

Eyal, Chaim H.; Winter, James P.; and DeGeorge, William F. 1981. "The Concept of Time Frame in Agenda-Setting," Mass Communication Review Yearbook, 2:212-218.

Funkhouser, G.R. 1973. "The Issues of the Sixties: An Exploratory Study of the Dynamics of Public Opinion," Public Opinion Quarterly, 37:62-75.

Hovland, Carl I. 1957. Order of Presentation in Persuasion, New Haven: Yale University Press.

Iyenger, Shanto; Peters, Mark D.; and Kinder, Donald. 1982. "Experimental Demonstrations of the 'Not-So-Minimal' Consequences of TV News Programs," The American Political Science Review, 76:848-858.

McCombs, Maxwell E., and Shaw, Donald L. 1972. "The Agenda-Setting Function of Mass Media," Public Opinion Quarterly, 36:176-187.

McLeod, J.M.; Becker, L.B.; and Byrnes, J.E. 1974. "Another Look at the Agenda-Setting Function of the Press," Communication Research, 1:131-166.

Nickerson, Raymond S. 1968. "A Note on Long-Term Recognition Memory for Pictorial Material," Psychonomic Science, 11:58.

Shaw, Donald L., and McCombs, Maxwell E. 1977. The Emergence of American Political Issues: The Agenda-Setting Function of the Press, St. Paul: West Publishing Co.

Siune, Karen, and Borre, Ole, 1975. "Setting the Agenda for a Danish Election," Journal of Communication, 25:65-73.

Tipton, Leonard; Haney, Roger D.; and Baseheart, John R. 1975. "Media Agenda-Setting in City and State Election Campaigns," Journalism Quarterly, 52:15-22.

Willows, Dale M. 1978. "A Picture Is No Always Worth a Thousand Words: Pictures as Distractors in Reading," Journal of Educational Psychology, 70:255-262.

Winters, James P. 1981. "Contingent Conditions in the Agenda-Setting Process," Mass Communication Review Yearbook, 2:235-243.

Wolf, Rita; and Grotto, Gerald L. 1985. "Images: A Question of Readership," Newspaper Research Journal, 6:30-36.